

WHAT IS CLAIMED IS:

1. A display system, comprising:
a light modulator;
an optical converter module coupled to the light modulator, wherein the optical
5 converter module comprises
a plurality of converter units, wherein one or more of the plurality of
converter units comprises:
one or more polarizing beam splitters configured to transmit a
first polarized component of an input light and reflect a
10 second polarized component of the input light;
at least one reflector coupled to the one or more polarizing beam
splitters and configured to direct the second polarized
component towards the light modulator; and
at least one retardation element coupled to one or more of the
15 plurality of polarizing beam splitters and configured to
rotate polarization of at least one of the first and second
polarized components.
2. A display system according to claim 1, wherein the at least one
retardation element is a quarter-wave retardation film.
- 20 3. A display system according to claim 1, wherein the plurality of
converters units are placed linearly parallel to one another in an array arrangement.

4. A display system according to claim 1, wherein the light modulator is a liquid crystal panel.

5. A display system according to claim 1, wherein the reflector is a polarizing beam splitter.

5 6. A display system according to claim 1, wherein the at least one retardation element is placed between the at least one reflector and the one or more polarizing beam splitters.

7. A display system according to claim 1, further comprising:
an illumination source coupled to the optical converter and configured to
10 generate the input light.

8. A display system according to claim 7, wherein the illumination source is a backlight unit.

9. A display system according to claim 1, wherein the optical converter module further comprises:
15 a plurality of lenses coupled to the plurality of converter units and configured to focus the input light towards the one or more polarizing beam splitters.

10. A display system according to claim 9, wherein the lenses are placed linearly parallel to one another in an array arrangement.

11. A display system according to claim 1, wherein the optical converter
20 module further comprises:

at least one light-diffusing layer coupled to the plurality of converter units and configured to scatter light output from the plurality of converter units towards the light modulator.

12. An optical converter module for a display system comprising:
5 a plurality of converter units, wherein one or more of the plurality of converter units comprises:
one or more polarizing beam splitters configured to transmit a first polarized component of an input light and reflect a second polarized component of the input light;
10 at least one reflector coupled to the one or more polarizing beam splitters and configured to direct the second polarized component; and
at least one retardation element coupled to one or more of the plurality of polarizing beam splitters and configured to rotate polarization of at least one of the first and second polarized components.
- 15 13. An optical converter module according to claim 12, wherein the at least one retardation element is a quarter-wave retardation film.
14. An optical converter module according to claim 12, wherein the plurality of converters units are placed linearly parallel to one another in an array arrangement.
15. An optical converter module according to claim 12, wherein the reflector
20 is a polarizing beam splitter.

16. An optical converter module according to claim 12, wherein the at least one retardation element is placed between the at least one reflector and the one or more polarizing beam splitters.

17. An optical converter module according to claim 12, further comprising:
5 a plurality of lenses coupled to the plurality of converter units and configured to focus the input light towards the one or more polarizing beam splitters.

18. An optical converter module according to claim 12, further comprising:
at least one light-diffusing layer coupled to the plurality of converter units and configured to scatter light output from the plurality of converter units.

10 19. A method of modulating light in a display system comprising:
receiving randomly polarized input light;
transmitting a first portion of the randomly polarized input light;
rotating polarization of a second portion of the randomly polarized input light;
and
15 directing the first and second portions of randomly polarized input light to a display panel.

20. A method according to claim 19, wherein the polarization of the second portion of the randomly polarized input light is rotated to be substantially similar to polarization of the first portion of the randomly polarized input light.

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